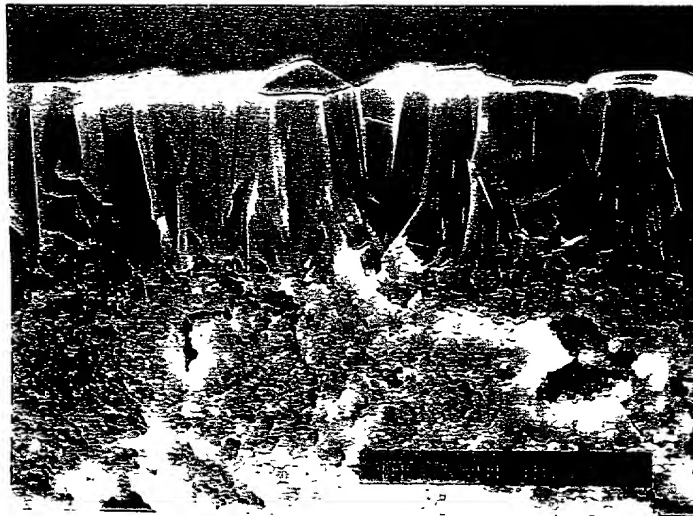


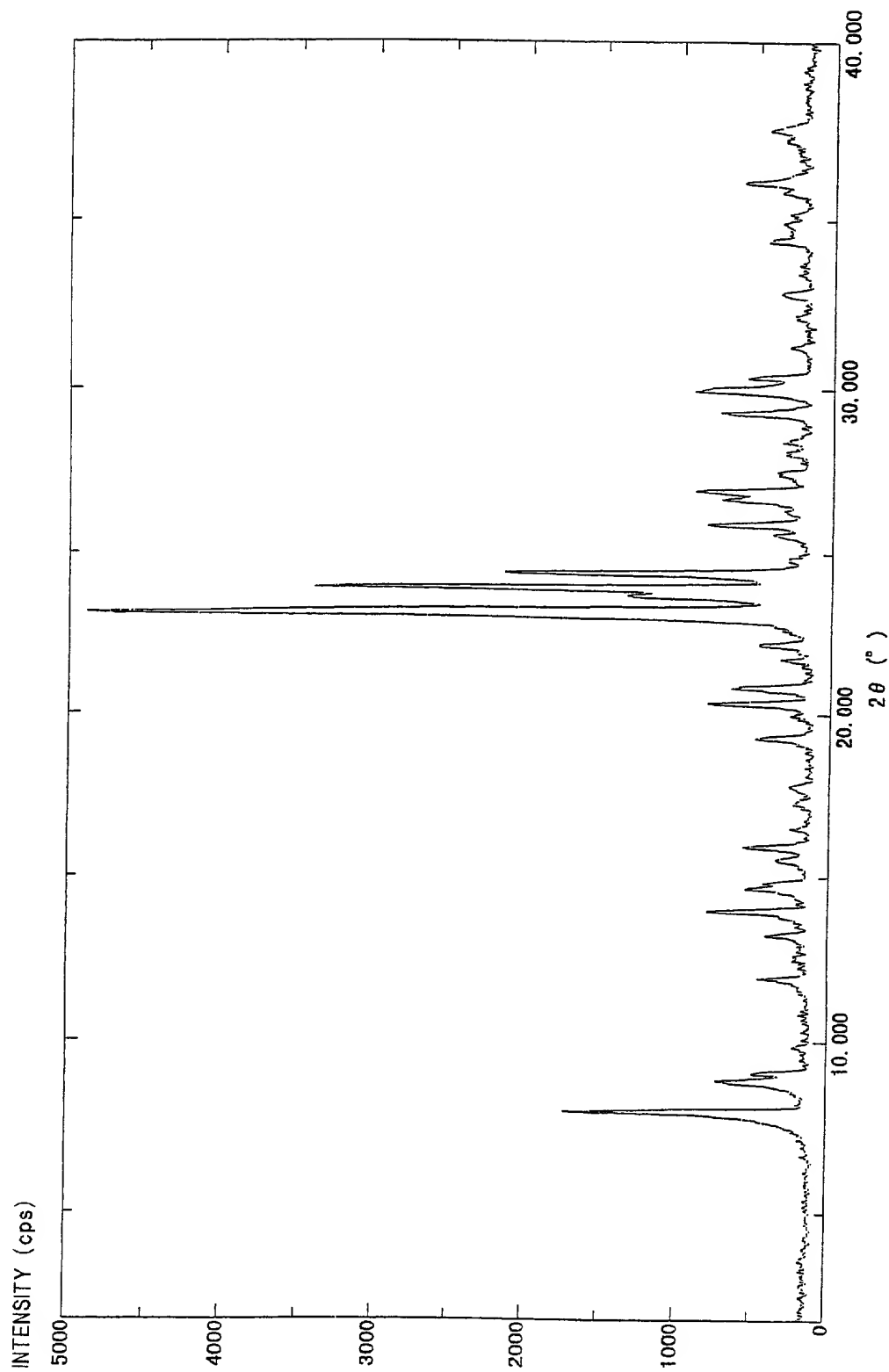
1/24

FIG. 1



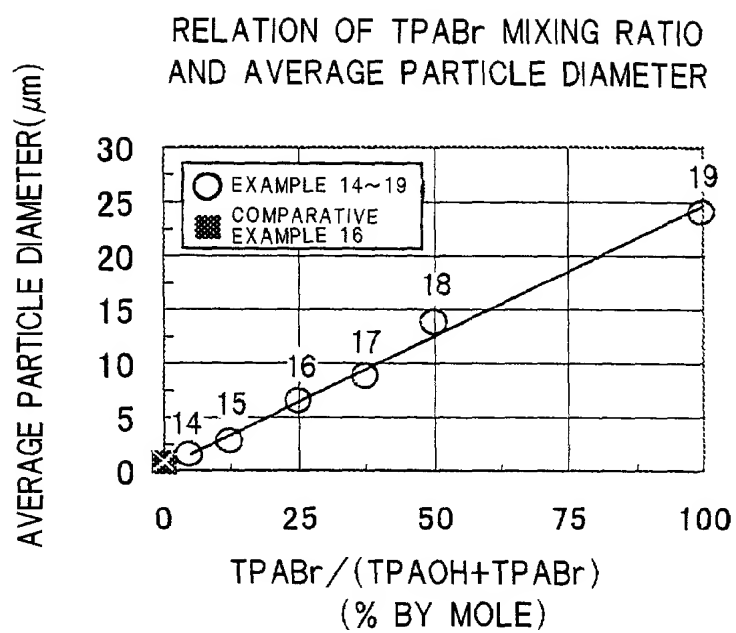
2/24

FIG. 2



3/24

FIG. 3



4/24

FIG. 4



—  
10 $\mu$ m

FIG. 5



—  
10 $\mu$ m

5/24

FIG. 6



—  
10 $\mu$ m

FIG. 7



—  
10 $\mu$ m

6/24

FIG. 8



—  
10  $\mu$ m

7/24

FIG. 9

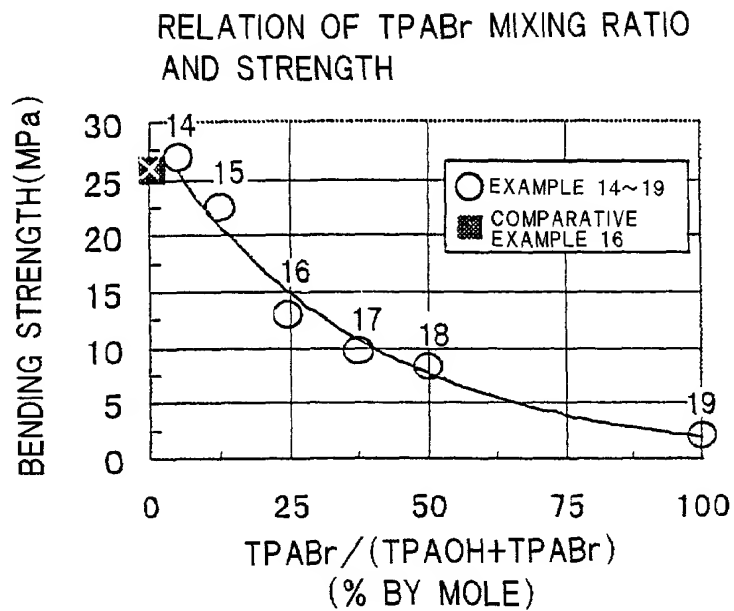
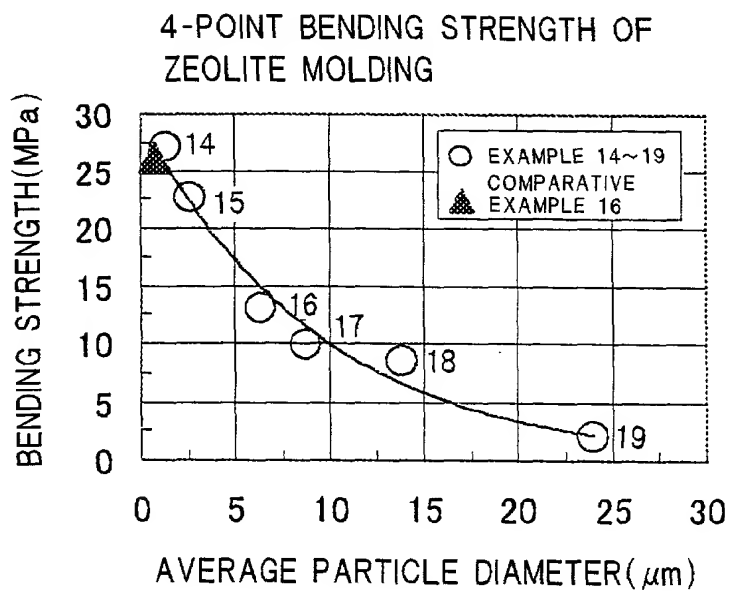
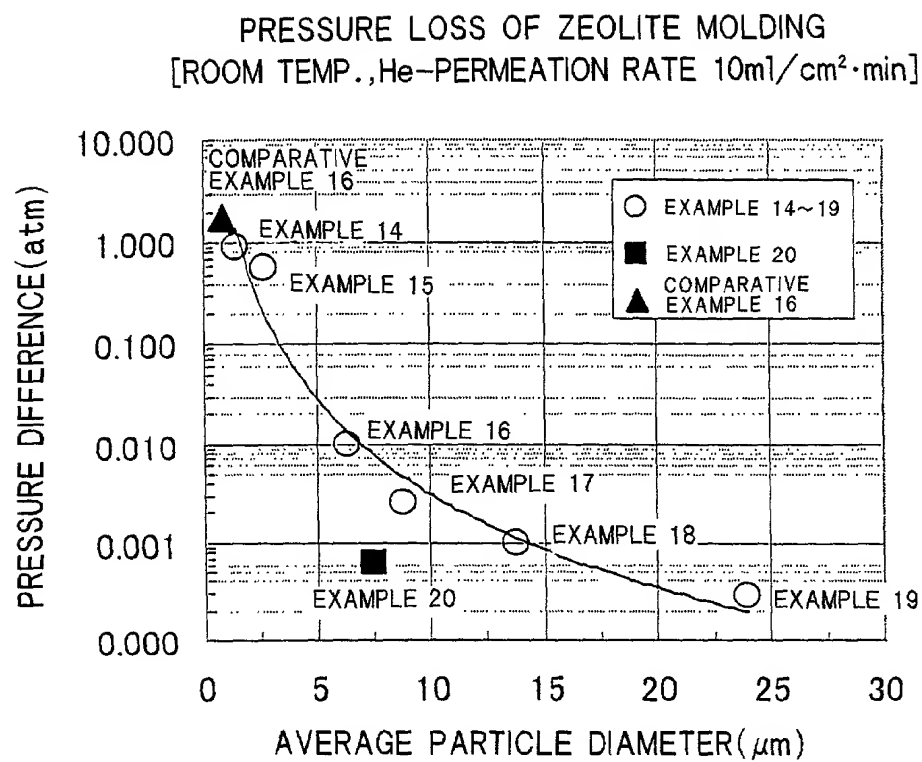


FIG. 10



8/24

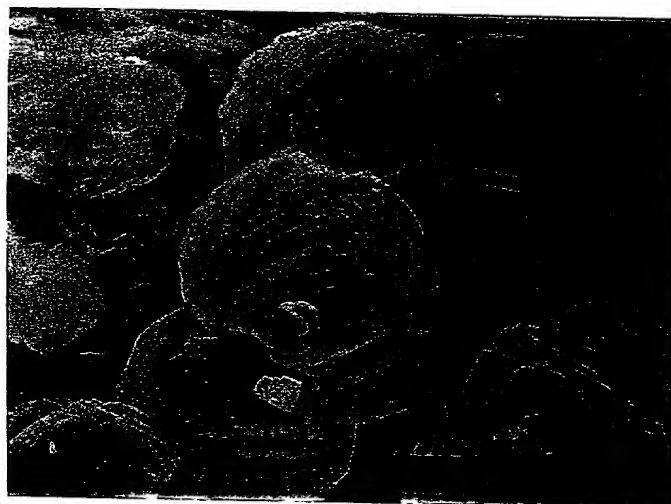
FIG. 11





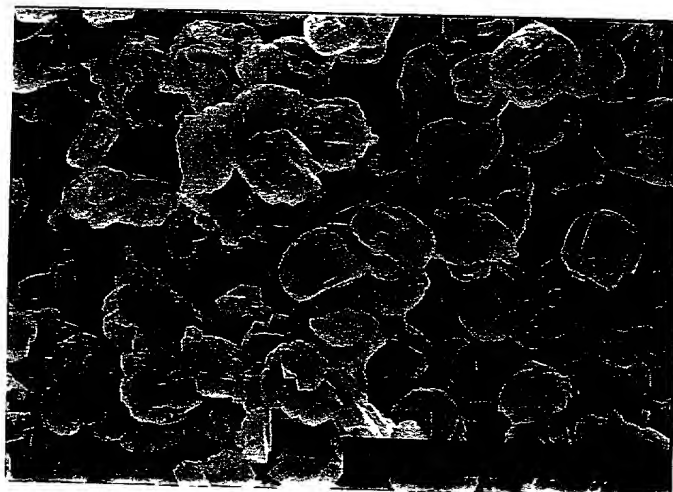
9/24

FIG. 12



—  
10  $\mu$ m

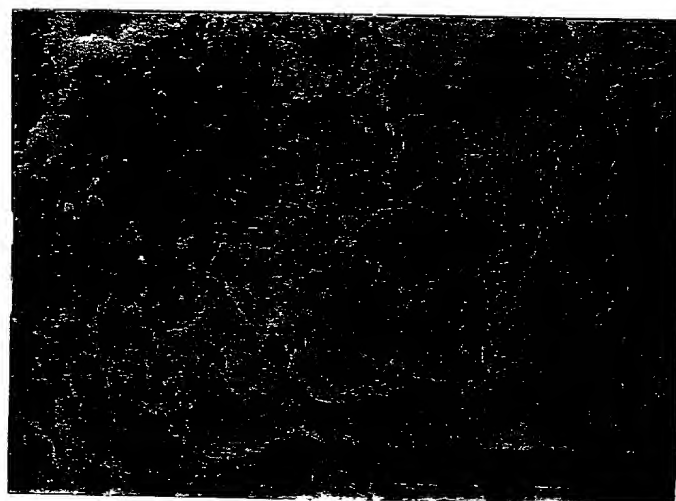
FIG. 13



—  
10  $\mu$ m

10/24

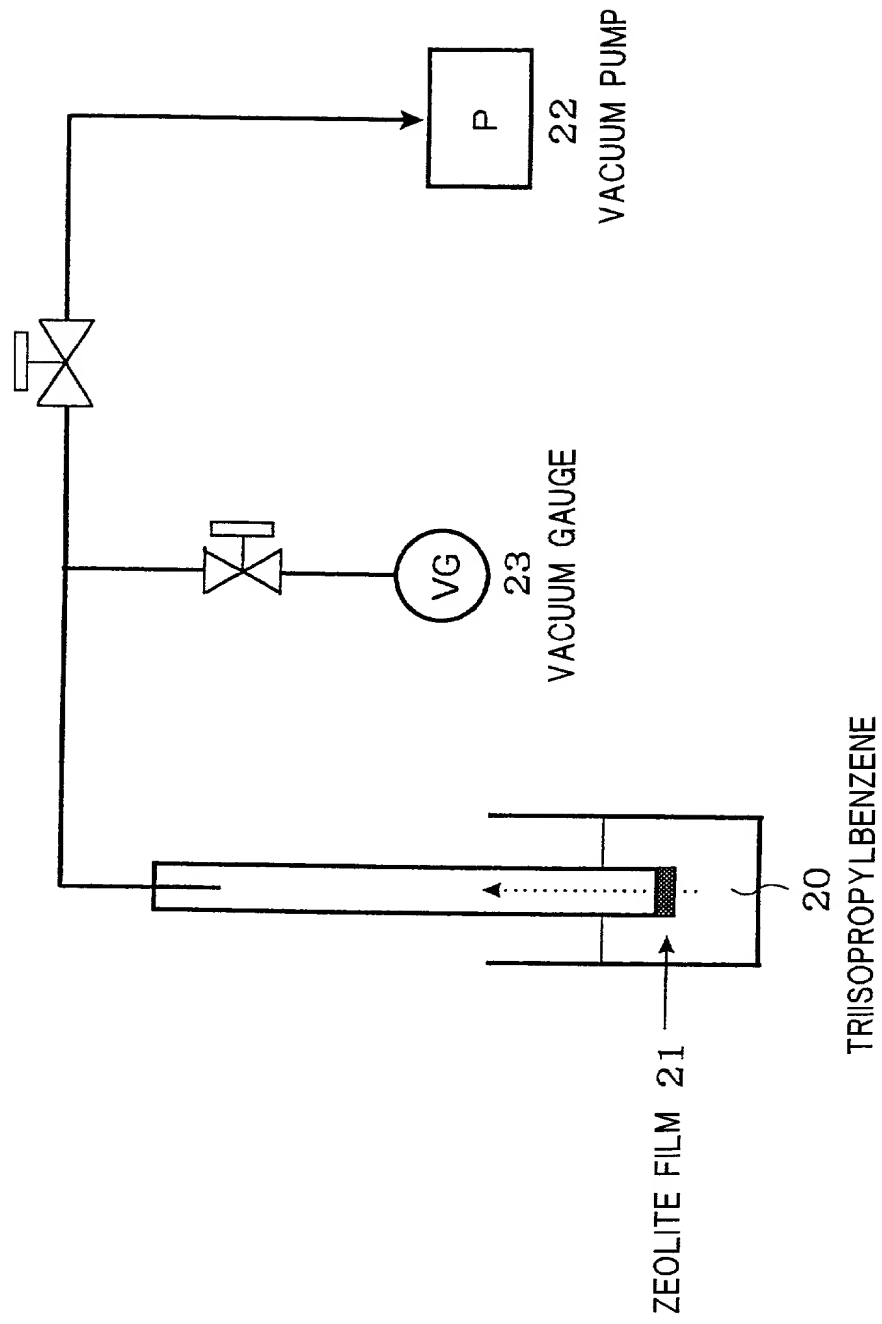
FIG. 14



—  
10 $\mu$ m

11/24

FIG. 15



12/24

FIG.16

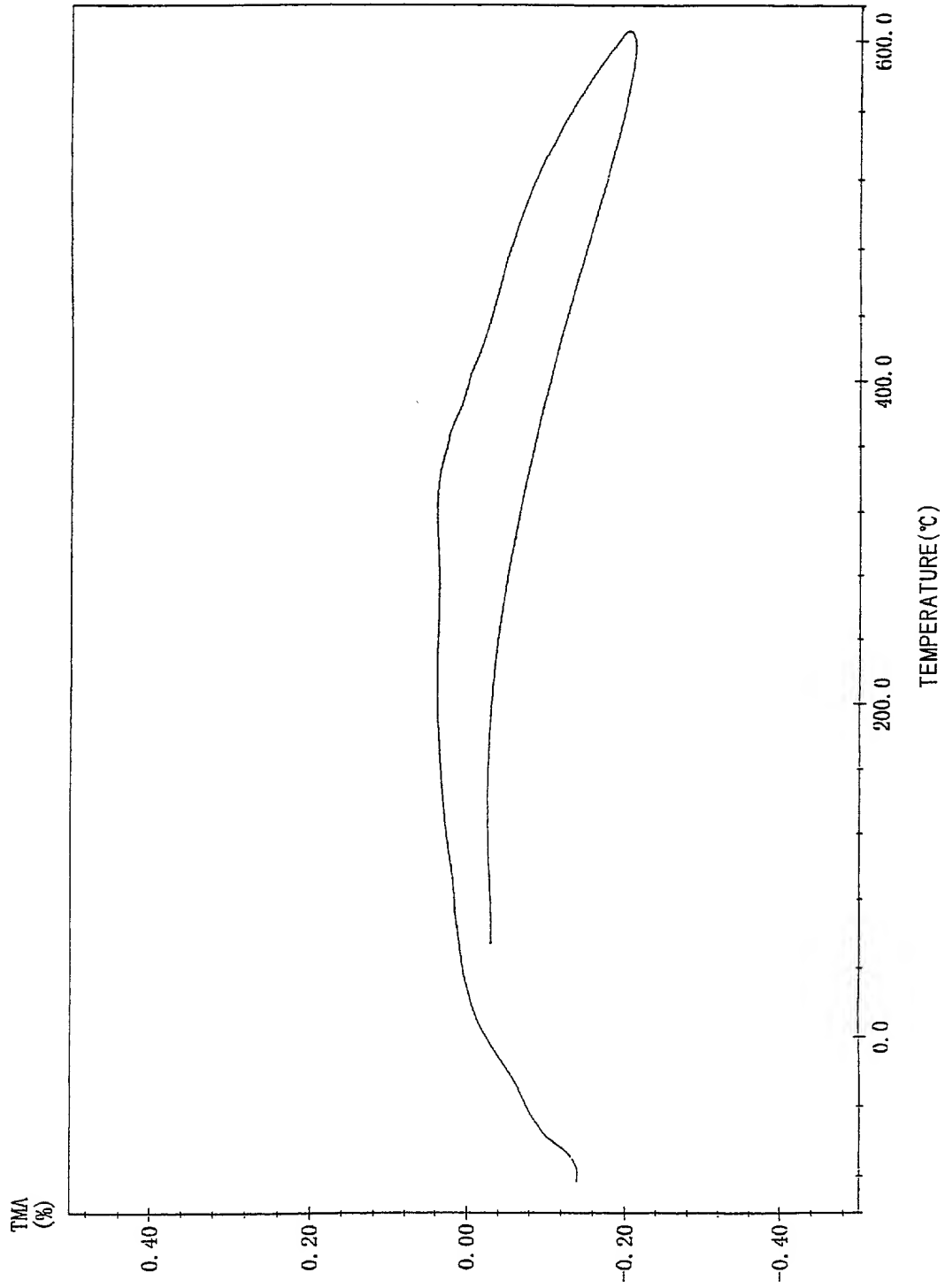
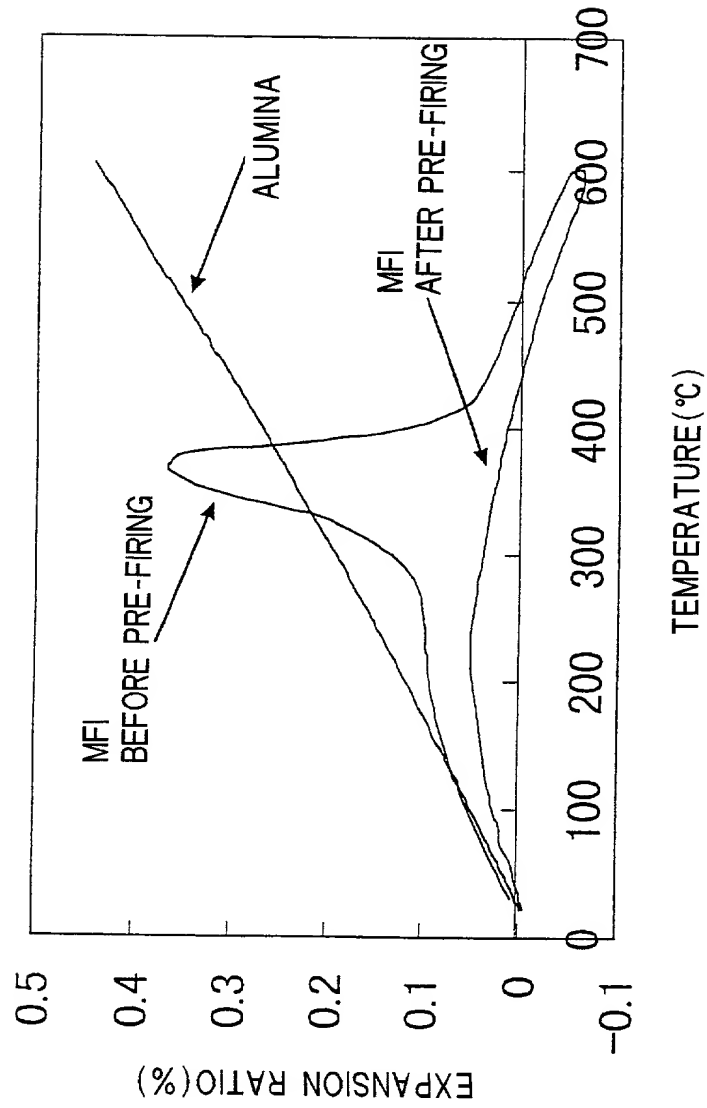


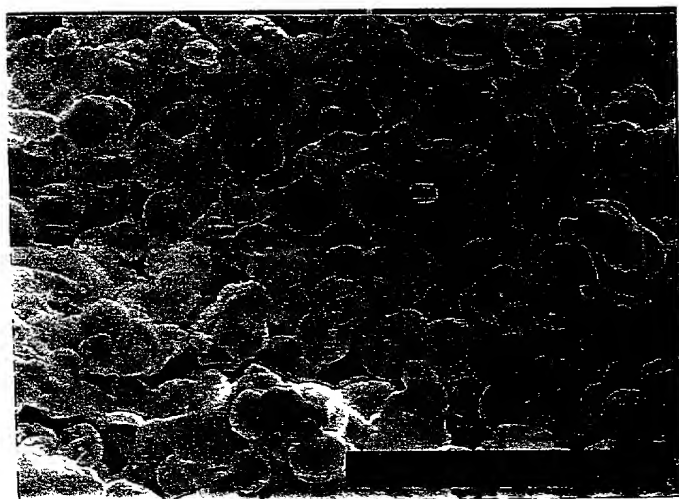
FIG.17

THERMAL EXPANSION COEFFICIENT OF ALUMINA AND MFI ZEOLITE



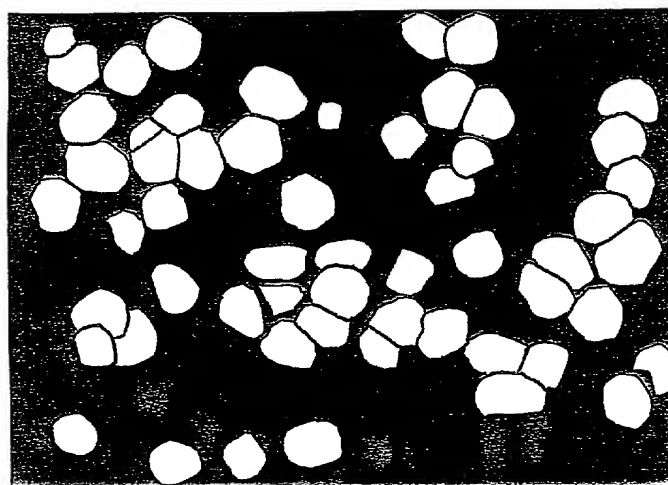
14/24

FIG. 18



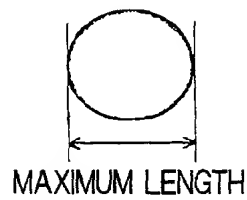
100  $\mu$ m

FIG. 19



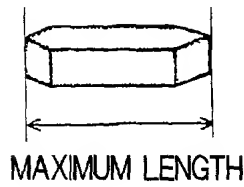
100  $\mu$ m

FIG. 20(a)



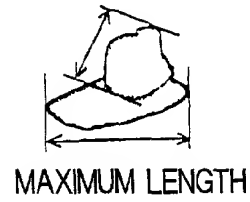
IN THE CASE OF  
SPHERICAL PARTICLE

FIG. 20(b)



IN THE CASE OF  
PLATE-LIKE PARTICLE

FIG. 20(c)



IN THE CASE OF  
IRREGULAR-SHAPE PARTICLE

FIG. 21

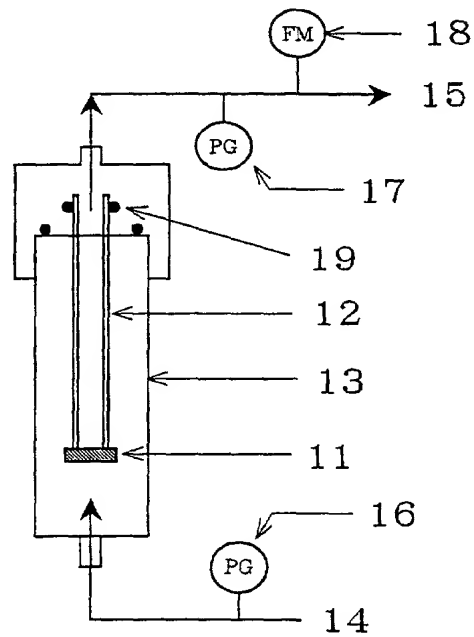


FIG. 22

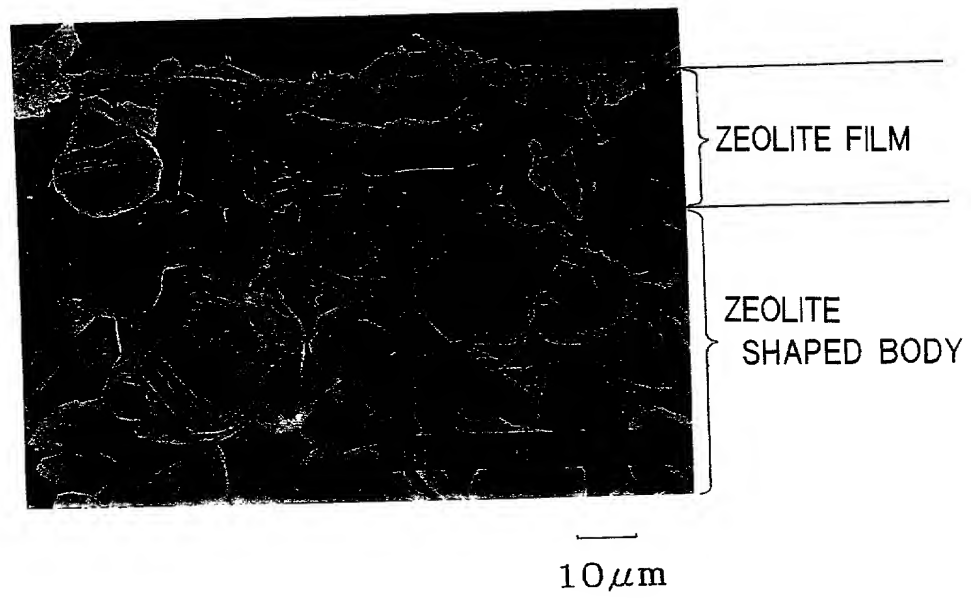
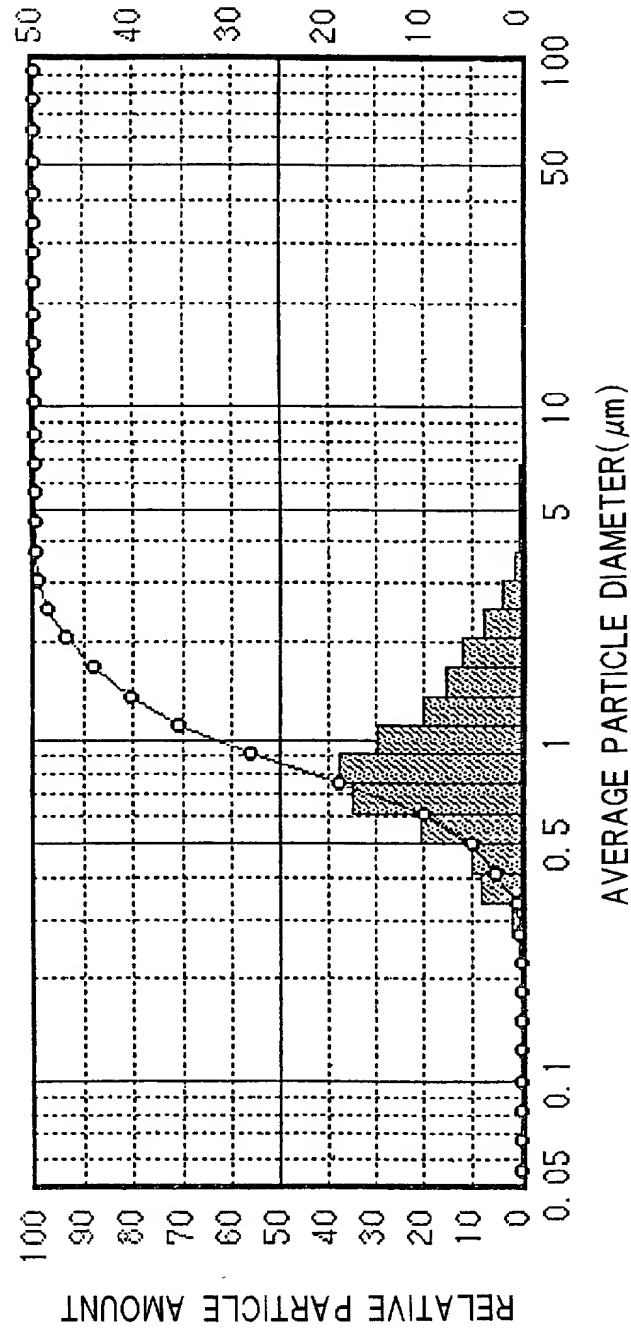


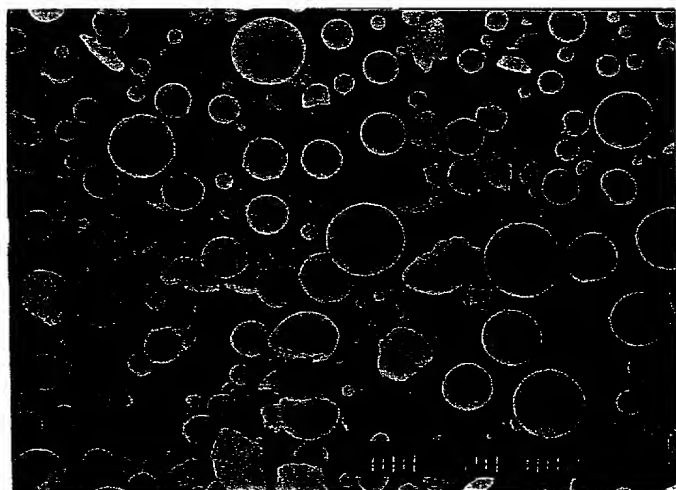


FIG. 23



18/24

FIG. 24



100  $\mu\text{m}$

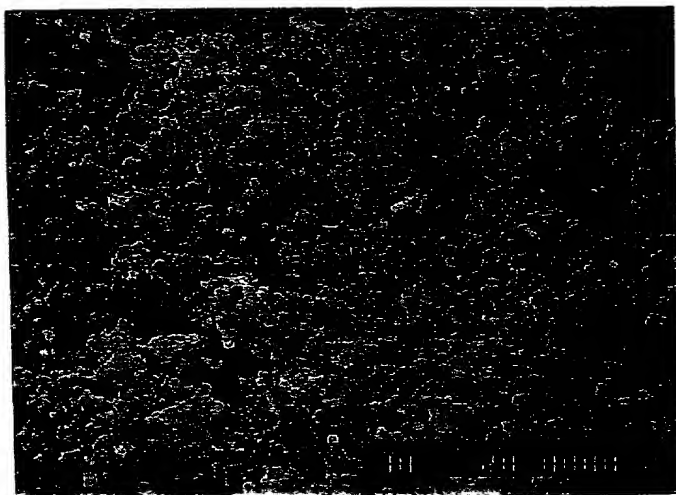
FIG. 25



100  $\mu\text{m}$

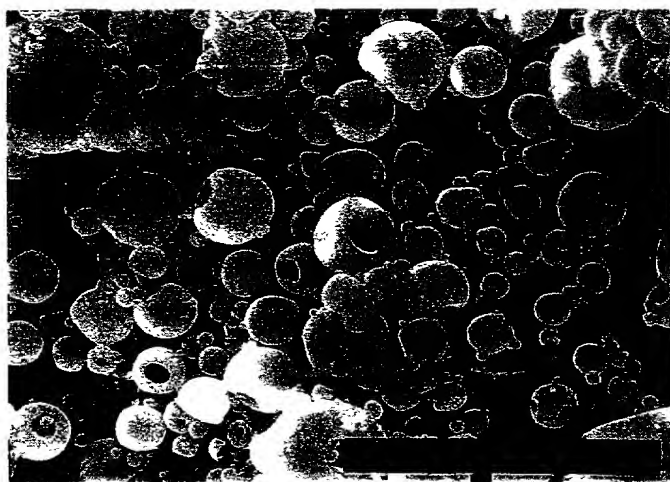
19/24

FIG. 26



10  $\mu$ m

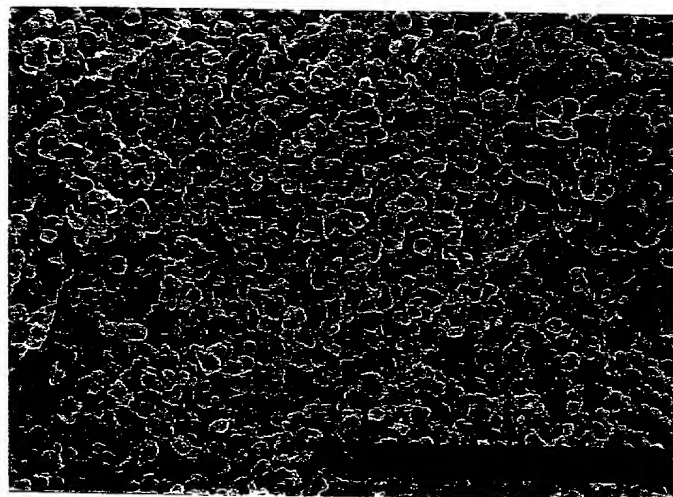
FIG. 27



10  $\mu$ m

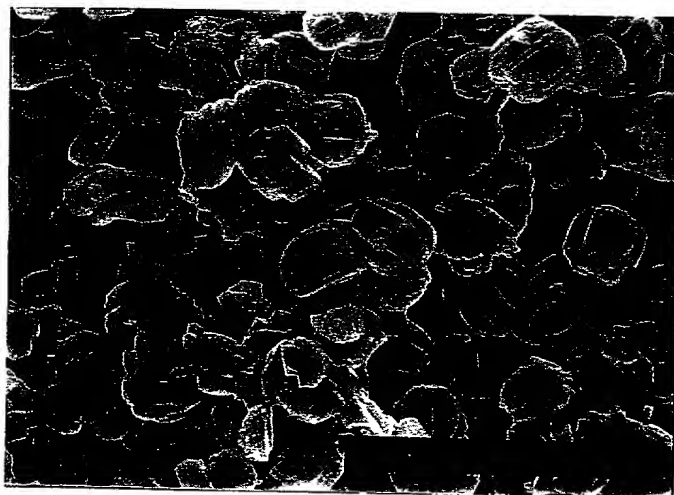
20/24

FIG. 28



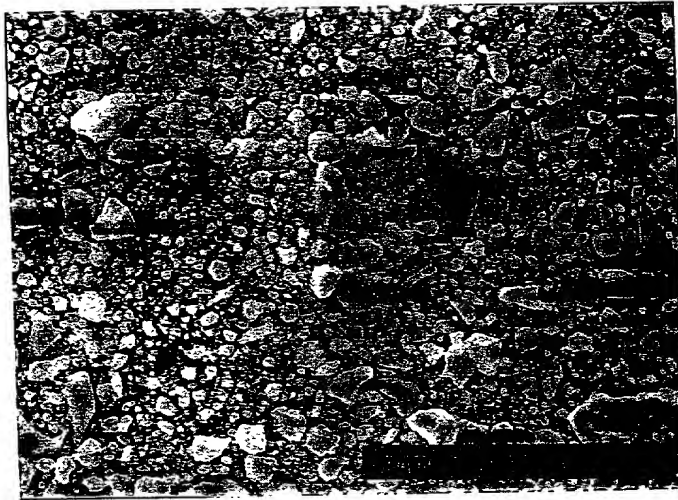
100  $\mu\text{m}$

FIG. 29



10  $\mu\text{m}$

FIG. 30



100  $\mu$ m

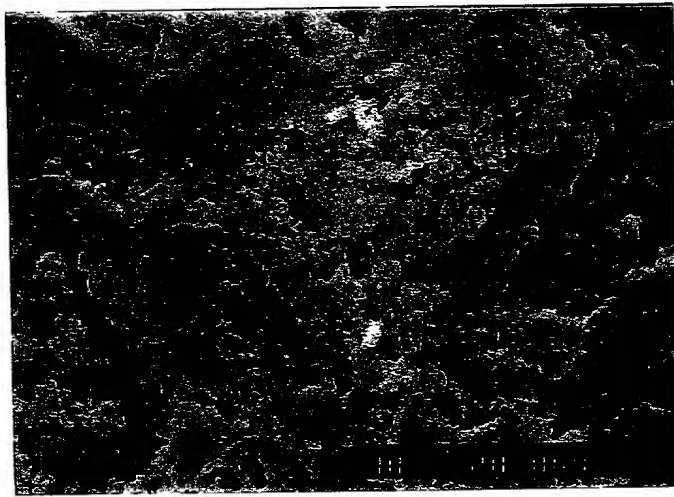
FIG. 31



100  $\mu$ m

22/24

FIG.32



10  $\mu$ m

FIG. 33

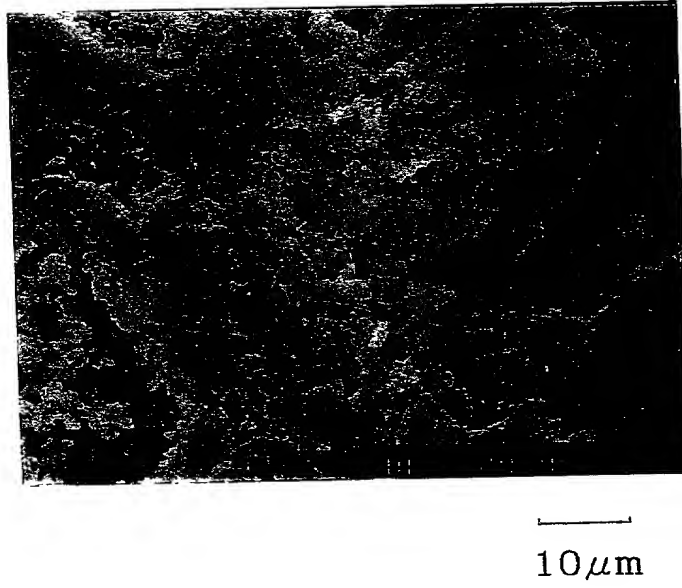


FIG. 34

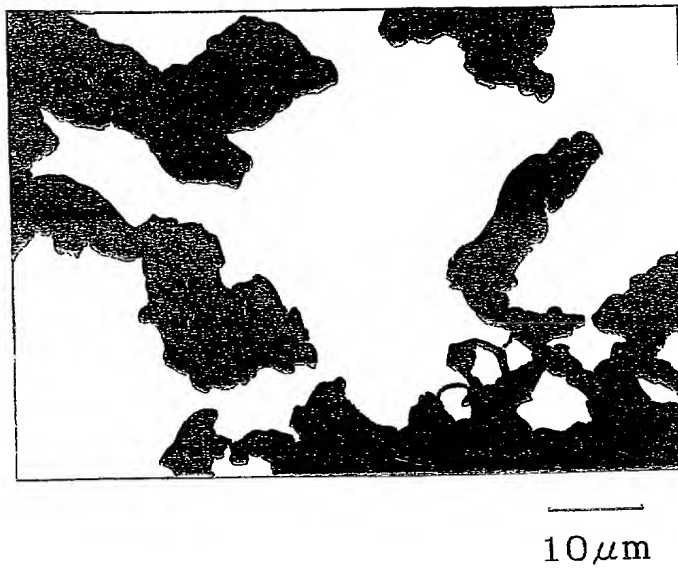


FIG. 35

